

# SEQUENCE LISTING

<110> FUJISE, KEN  
YEH, EDWARD T.H.

<120> METHODS AND COMPOSITIONS RELATING TO FORTILIN, AN  
ANTI-APOPTOTIC MOLECULE, AND MODULATORS OF FORTILIN

<130> UTSH:251US

<140> UNKNOWN

<141> 2001-10-30

<140> 60/244,416

<141> 2000-10-30

<160> 9

<170> PatentIn Ver. 2.1

<210> 1

<211> 830

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (95)..(613)

<400> 1

cccccccgag cgccgctccg gctgcaccgc gctcgctccg agtttcaggc tcgtgctaag 60

ctagcgccgt cgctgtctcc cttcagtcgc catc atg att atc tac cgg gac ctc 115

Met Ile Ile Tyr Arg Asp Leu

1

5

atc agc cac gat gag atg ttc tcc gac atc tac aag atc cgg gag atc 163

Ile Ser His Asp Glu Met Phe Ser Asp Ile Tyr Lys Ile Arg Glu Ile

10

15

20

gcg gac ggg ttg tgc ctg gag gtg gag ggg aag atg gtc agt agg aca 211

Ala Asp Gly Leu Cys Leu Glu Val Glu Gly Lys Met Val Ser Arg Thr

25

30

35

gaa ggt aac att gat gac tcg ctc att ggt gga aat gcc tcc gct gaa 259

Glu Gly Asn Ile Asp Asp Ser Leu Ile Gly Gly Asn Ala Ser Ala Glu

40

45

50

55

ggc ccc gag ggc gaa ggt acc gaa agc aca gta atc act ggt gtc gat 307

Gly Pro Glu Gly Glu Gly Thr Glu Ser Thr Val Ile Thr Gly Val Asp

60

65

70

att gtc atg aac cat cac ctg cag gaa aca agt ttc aca aaa gaa gcc 355

Ile Val Met Asn His His Leu Gln Glu Thr Ser Phe Thr Lys Glu Ala

75

80

85

tac aag aag tac atc aaa gat tac atg aaa tca atc aaa ggg aaa ctt 403  
 Tyr Lys Lys Tyr Ile Lys Asp Tyr Met Lys Ser Ile Lys Gly Lys Leu  
           90                          95                          100

gaa gaa cag aga cca gaa aga gta aaa cct ttt atg aca ggg gct gca 451  
 Glu Glu Gln Arg Pro Glu Arg Val Lys Pro Phe Met Thr Gly Ala Ala  
           105                          110                          115

gaa caa atc aag cac atc ctt gct aat ttc aaa aac tac cag ttc ttt 499  
 Glu Gln Ile Lys His Ile Leu Ala Asn Phe Lys Asn Tyr Gln Phe Phe  
 120                          125                          130                          135

att ggt gaa aac atg aat cca gat ggc atg gtt gct cta ttg gac tac 547  
 Ile Gly Glu Asn Met Asn Pro Asp Gly Met Val Ala Leu Leu Asp Tyr  
                           140                          145                          150

cgt gag gat ggt gtg acc cca tat atg att ttc ttt aag gat ggt tta 595  
 Arg Glu Asp Gly Val Thr Pro Tyr Met Ile Phe Phe Lys Asp Gly Leu  
                           155                          160                          165

gaa atg gaa aaa tgt taa caaatgtggc aattatttttg gatctatcac 643  
 Glu Met Glu Lys Cys  
           170

ctgtcatcat aactggcttc tgcttgatcat ccacacaaca ccaggactta agacaaatgg 703

gactgatgtc atcttgagct cttcatttat tttgactgtg atttattttgg agtggaggca 763

ttgttttttaa gaaaaacatg tcatgtaggt tgtctaaaaa taaaatgcat ttaaactcat 823

ttgagag 830

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 <211> 172  
 <212> PRT  
 <213> Homo sapiens

<400> 2  
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 Ile Tyr Lys Ile Arg Glu Ile Ala Asp Gly Leu Cys Leu Glu Val Glu  
           20                          25                          30  
 Gly Lys Met Val Ser Arg Thr Glu Gly Asn Ile Asp Asp Ser Leu Ile  
           35                          40                          45  
 Gly Gly Asn Ala Ser Ala Glu Gly Pro Glu Gly Glu Gly Thr Glu Ser  
           50                          55                          60  
 Thr Val Ile Thr Gly Val Asp Ile Val Met Asn His His Leu Gln Glu  
   65                          70                          75                          80  
 Thr Ser Phe Thr Lys Glu Ala Tyr Lys Lys Tyr Ile Lys Asp Tyr Met  
           85                          90                          95  
 Lys Ser Ile Lys Gly Lys Leu Glu Glu Gln Arg Pro Glu Arg Val Lys  
           100                          105                          110  
 Pro Phe Met Thr Gly Ala Ala Glu Gln Ile Lys His Ile Leu Ala Asn

		115					120			125						
Phe	Lys	Asn	Tyr	Gln	Phe	Phe	Ile	Gly	Glu	Asn	Met	Asn	Pro	Asp	Gly	
	130						135				140					
Met	Val	Ala	Leu	Leu	Asp	Tyr	Arg	Glu	Asp	Gly	Val	Thr	Pro	Tyr	Met	
145					150					155					160	
Ile	Phe	Phe	Lys	Asp	Gly	Leu	Glu	Met	Glu	Lys	Cys					
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<210> 3  
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 <213> Rabbit

<400> 3																
Met	Ile	Ile	Tyr	Arg	Asp	Leu	Ile	Ser	His	Asp	Glu	Met	Phe	Ser	Asp	
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Ile	Tyr	Lys	Ile	Arg	Glu	Ile	Ala	Gly	Gly	Leu	Cys	Leu	Glu	Val	Glu	
			20					25					30			
Gly	Lys	Met	Val	Ser	Arg	Thr	Glu	Gly	Asn	Ile	Asp	Asp	Ser	Leu	Ile	
		35					40					45				
Gly	Gly	Asn	Ala	Ser	Ala	Glu	Gly	Pro	Glu	Gly	Glu	Gly	Thr	Glu	Ser	
	50					55					60					
Thr	Val	Ile	Thr	Gly	Val	Asp	Ile	Val	Met	Asn	His	His	Leu	Gln	Glu	
65					70					75					80	
Thr	Ser	Phe	Thr	Lys	Glu	Ala	Tyr	Lys	Lys	Tyr	Ile	Lys	Asp	Tyr	Met	
				85					90					95		
Lys	Ser	Ile	Lys	Gly	Lys	Leu	Glu	Glu	Gln	Arg	Pro	Glu	Arg	Val	Lys	
			100					105					110			
Pro	Phe	Met	Thr	Gly	Ala	Ala	Glu	Gln	Ile	Lys	His	Ile	Leu	Ala	Asn	
		115					120					125				
Phe	Lys	Asn	Tyr	Gln	Phe	Tyr	Ile	Gly	Glu	Asn	Met	Asn	Pro	Asp	Gly	
	130					135					140					
Met	Val	Ala	Leu	Leu	Asp	Tyr	Arg	Glu	Asp	Gly	Val	Thr	Pro	Phe	Met	
145					150					155					160	
Ile	Phe	Phe	Lys	Asp	Gly	Leu	Glu	Met	Glu	Lys	Cys					
				165					170							

<210> 4  
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 <212> PRT  
 <213> Mus musculus

<400> 4

Met Ile Ile Tyr Arg Asp Leu Ile Ser His Asp Glu Leu Phe Ser Asp  
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Ile Tyr Lys Ile Arg Glu Ile Ala Asp Gly Leu Cys Leu Glu Val Glu  
20 25 30

Gly Lys Met Val Ser Arg Thr Glu Gly Ala Ile Asp Asp Ser Leu Ile  
35 40 45

Gly Gly Asn Ala Ser Ala Glu Gly Pro Glu Gly Glu Gly Thr Glu Ser  
50 55 60

Thr Val Val Thr Gly Val Asp Ile Val Met Asn His His Leu Gln Glu  
65 70 75 80

Thr Ser Phe Thr Lys Glu Ala Tyr Lys Lys Tyr Ile Lys Asp Tyr Met  
85 90 95

Lys Ser Leu Lys Gly Lys Leu Glu Glu Gln Lys Pro Glu Arg Val Lys  
100 105 110

Pro Phe Met Thr Gly Ala Ala Glu Gln Ile Lys His Ile Leu Ala Asn  
115 120 125

Phe Asn Asn Tyr Gln Phe Phe Ile Gly Glu Asn Met Asn Pro Asp Gly  
130 135 140

Met Val Ala Leu Leu Asp Tyr Arg Glu Asp Gly Val Thr Pro Phe Met  
145 150 155 160

Ile Phe Phe Lys Asp Gly Leu Glu Met Glu Lys Cys  
165 170

<210> 5

<211> 172

<212> PRT

<213> Chicken

<400> 5

Met Ile Ile Tyr Arg Asp Cys Ile Ser Gln Asp Glu Met Phe Ser Asp  
1 5 10 15

Ile Tyr Lys Ile Arg Glu Val Ala Asn Gly Leu Cys Leu Glu Val Glu  
20 25 30

Gly Lys Met Val Thr Arg Thr Glu Gly Gln Ile Asp Asp Ser Leu Ile  
35 40 45

Gly Gly Asn Ala Ser Ala Glu Gly Pro Glu Gly Glu Gly Thr Glu Ala  
50 55 60

Thr Val Ile Thr Gly Val Asp Ile Val Ile Asn His His Leu Gln Glu  
65 70 75 80

Thr Ser Phe Thr Lys Glu Ser Tyr Lys Lys Tyr Ile Lys Asp Tyr Met  
                     85                    90                    95  
 Lys Ala Ile Lys Ala Arg Leu Glu Glu His Lys Pro Glu Arg Val Lys  
                     100                    105                    110  
 Pro Phe Met Thr Gly Ala Ala Glu Gln Ile Lys His Ile Leu Ala Asn  
                     115                    120                    125  
 Phe Lys Asn Tyr Gln Phe Phe Ile Gly Glu Asn Met Asn Pro Asp Gly  
                     130                    135                    140  
 Met Val Ala Leu Leu Asp Phe Arg Glu Asp Gly Val Thr Pro Tyr Met  
                     145                    150                    155                    160  
 Ile Phe Phe Lys Asp Gly Leu Glu Ile Glu Lys Cys  
                     165                    170

<210> 6  
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 <212> PRT  
 <213> D. Melanogaster

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 Thr Tyr Lys Met Lys Leu Val Asp Asp Val Ile Tyr Glu Val Tyr Gly  
                     20                    25                    30  
 Lys Leu Ile Thr Arg Gln Gly Asp Asp Ile Lys Leu Glu Gly Ala Asn  
                     35                    40                    45  
 Ala Ser Ala Glu Glu Ala Asp Glu Gly Thr Asp Ile Thr Ser Glu Ser  
                     50                    55                    60  
 Gly Val Asp Val Val Leu Asn His Arg Leu Thr Glu Cys Phe Ala Phe  
   65                    70                    75                    80  
 Gly Asp Lys Lys Ser Tyr Thr Leu Tyr Leu Lys Asp Tyr Met Lys Lys  
                     85                    90                    95  
 Val Leu Ala Lys Leu Glu Glu Lys Ser Pro Asp Gln Val Asp Ile Phe  
                     100                    105                    110  
 Lys Thr Asn Met Asn Lys Ala Met Lys Asp Ile Leu Gly Arg Phe Lys  
                     115                    120                    125  
 Glu Leu Gln Phe Phe Thr Gly Glu Ser Met Asp Cys Asp Gly Met Val  
                     130                    135                    140  
 Ala Leu Val Glu Tyr Arg Glu Ile Asn Gly Asp Ser Val Pro Val Leu  
   145                    150                    155                    160

Met Phe Phe Lys His Gly Leu Glu Glu Glu Lys Cys  
 165 170

<210> 7  
 <211> 181  
 <212> PRT  
 <213> C. ELEGANS

<400> 7  
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 Ser Phe Pro Met Lys Leu Val Asp Asp Leu Val Tyr Glu Phe Lys Gly  
 20 25 30  
 Lys His Val Val Arg Lys Glu Gly Glu Ile Val Leu Ala Gly Ser Asn  
 35 40 45  
 Pro Ser Ala Glu Glu Gly Ala Glu Asp Asp Gly Ser Asp Glu His Val  
 50 55 60  
 Glu Arg Gly Ile Asp Ile Val Leu Asn His Lys Leu Val Glu Met Asn  
 65 70 75 80  
 Cys Tyr Glu Asp Ala Ser Met Phe Lys Ala Tyr Ile Lys Lys Phe Met  
 85 90 95  
 Lys Asn Val Ile Asp His Met Glu Lys Asn Asn Arg Asp Lys Ala Asp  
 100 105 110  
 Val Asp Ala Phe Lys Lys Lys Ile Gln Gly Trp Val Val Ser Leu Leu  
 115 120 125  
 Ala Lys Asp Arg Phe Lys Asn Leu Ala Phe Phe Ile Gly Glu Arg Ala  
 130 135 140  
 Ala Glu Gly Ala Glu Asn Gly Gln Val Ala Ile Ile Glu Tyr Arg Asp  
 145 150 155 160  
 Val Asp Gly Thr Glu Val Pro Thr Leu Met Leu Val Lys Glu Ala Ile  
 165 170 175  
 Ile Glu Glu Lys Cys  
 180

<210> 8  
 <211> 166  
 <212> PRT  
 <213> S. Cerevisiae

<400> 8  
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Ala Tyr Asp	Ala Lys Leu Val	Asp Asp Val Ile Tyr	Glu Ala Asp Cys
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Ala Met Val	Asn Val Gly Gly	Asp Asn Ile Asp Ile	Gly Ala Asn Pro
35		40	45
Ser Ala Glu	Gly Gly Asp Asp	Asp Val Glu Glu	Gly Ala Glu Met Val
50		55	60
Asn Asn Val	Val His Ser Phe	Arg Leu Gln Gln Thr	Ala Phe Asp Lys
65		70	75
Lys Ser Phe	Leu Thr Tyr Ile	Lys Gly Tyr Met	Lys Ala Val Lys Ala
	85	90	95
Lys Leu Gln	Glu Thr Asn Pro	Glu Glu Val Pro	Lys Phe Glu Lys Gly
	100	105	110
Ala Gln Thr	Tyr Val Lys Lys	Val Ile Gly Ser	Phe Lys Asp Trp Glu
	115	120	125
Phe Phe Thr	Gly Glu Ser Met	Asp Pro Asp Ala	Met Val Val Met Leu
	130	135	140
Asn Tyr Arg	Glu Asp Gly Thr	Thr Pro Phe Val	Ala Ile Trp Lys His
145	150	155	160
Gly Ile Val	Glu Glu Lys		
	165		

<210> 9  
 <211> 168  
 <212> PRT  
 <213> RICE

<400> 9  
 Met Leu Val Tyr Gln Asp Leu Leu Tyr Gly Asp Glu Leu Leu Ser Asp  
 1 5 10 15  
 Ser Phe Pro Tyr Arg Glu Ile Glu Asn Gly Ile Leu Trp Glu Val Asp  
 20 25 30  
 Gly Lys Trp Val Val Gln Gly Ala Ile Asp Val Asp Ile Gly Ala Asn  
 35 40 45  
 Pro Ser Ala Glu Gly Gly Gly Asp Asp Glu Gly Val Asp Asp Gln Ala  
 50 55 60  
 Val Lys Val Val Asp Ile Val Asp Thr Phe Arg Leu Gln Glu Gln Pro  
 65 70 75 80  
 Pro Phe Asp Lys Lys Gln Phe Val Thr Phe Met Lys Arg Tyr Ile Lys

	85		90		95										
Asn	Leu	Ser	Ala	Lys	Leu	Asp	Ala	Glu	Lys	Gln	Glu	Glu	Phe	Lys	Phe
			100					105					110		
Asn	Ile	Glu	Gly	Ala	Thr	Lys	Tyr	Leu	Leu	Gly	Lys	Leu	Lys	Asp	Leu
		115					120					125			
Gln	Phe	Phe	Val	Gly	Glu	Ser	Met	His	Asp	Asp	Gly	Gly	Leu	Val	Phe
	130						135				140				
Ala	Tyr	Tyr	Lys	Asp	Gly	Ala	Thr	Asp	Pro	Thr	Phe	Leu	Tyr	Phe	Ser
145					150					155					160
His	Gly	Leu	Lys	Glu	Val	Lys	Cys								
				165											